

US010642378B2

# (12) United States Patent Huffman et al.

# (10) Patent No.: US 10,642,378 B2

# (45) **Date of Patent:** May 5, 2020

#### (54) COLLAPSIBLE ELECTRONIC STYLUS

- (71) Applicant: **GOOGLE LLC**, Mountain View, CA
- (72) Inventors: **Katherine Huffman**, Mountain View, CA (US); **Donny Chen Reynolds**,

Mountain View, CA (US)

(73) Assignee: GOOGLE LLC, Mountain View, CA

(US)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 44 days.

- (21) Appl. No.: 15/982,968
- (22) Filed: May 17, 2018

# (65) Prior Publication Data

US 2019/0354204 A1 Nov. 21, 2019

- (51) **Int. Cl. G06F** 3/0354 (2013.01)
- (52) **U.S. Cl.** CPC ...... *G06F 3/03545* (2013.01)

## (56) References Cited

# U.S. PATENT DOCUMENTS

5,889,512	Α	3/1999	Moller et al.	
5,988,918	A *	11/1999	Johnson	B43K 5/005
				401/88
9,186,929	B1 *	11/2015	Mock	B43M 3/045
2005/0162412	A1	7/2005	Rönkkö et al.	

2014/0071100	A1	3/2014	Becerra Figueroa
2015/0070304	A1*	3/2015	Lettow G06F 3/044
			345/174
2015/0153821	A1	6/2015	Chi et al.
2015/0153851	A1*	6/2015	Knepper G06F 3/03545
			345/179

#### FOREIGN PATENT DOCUMENTS

CN	202862906 U	J	4/2013	
WO	2017160544 A	41	9/2017	
WO	WO2017160544	*	9/2017	 G06F 3/0354

### OTHER PUBLICATIONS

Killham, "Flexible stylus has some cool hidden talents [Reviews]", Reviews (https://www.cultofmac.com/category/reviews/), Apr. 19, 2016, pages 1-5.

International Search Report and Written Opinion for International Application No. PCT/US2019/026332, dated Jun. 21, 2019, 16 pages.

### \* cited by examiner

Primary Examiner — Andrew Sasinowski (74) Attorney, Agent, or Firm — Brake Hughes Bellermann LLP

# (57) ABSTRACT

A collapsible electronic stylus can include multiple panels, a processor, and a transmitter. The multiple panels can be rotatably attached to each other, the rotatable attachment of the multiple panels forming a loop and enabling the multiple panels to rotate with respect to each other between an open position that maximizes a volume enclosed by the panels and a collapsed position that minimizes the volume enclosed by the panels. The processor can be attached to at least one of the panels, the processor being configured to control a transmitter. The transmitter can be configured to transmit signals to a computing device.

## 19 Claims, 9 Drawing Sheets

